



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,393	02/27/2004	Junaid Syed	3040	2392
31424	7590	06/03/2005	EXAMINER	
BABCOCK IP LLC 24154 LAKESIDE DRIVE LAKE ZURICH, IL 60047			LIE, ANGELA M	
		ART UNIT	PAPER NUMBER	
		2821		
DATE MAILED: 06/03/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/708,393	SYED ET AL.	
	Examiner	Art Unit	
	Angela M. Lie	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 27 February 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 27 February 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 2/27/2004.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 4, 5, 8, 11, 18 and 19 are objected to because of the following informalities:

As to claims 4, 11 and 18, the word "electrodaged" is not clearly understood, it does not have a definition in a dictionary nor it is defined in the body of the specification. In order to be able to examine this claim, an examiner will exclude the word "electrodaged" from the claim 4. In order to use this word in the body of this claim, an inventor ought to explain clearly what it means. Furthermore, conductive ring can not be metalised, elctrodaged and over molded upon the radome at the same time, therefore "and" in the third line of claim 4, ought to be "or".

As to claims 5 and 19, the conductive ring can not be made of metal, metallic foil, adhesive foil and conductive rubber at the same time, therefore "and" in the third line of claim 5, should be "or".

As to claim 8, "the absorber is one of a foam ring and an absorbing surface coating", if the absorber is one of, the "and" is incorrect, it ought to be "or".

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 and 9-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kildal (US 6137449).

As to claim 1, Kildal discloses a radome for reflector antenna, comprising: a radome (Figure 2, element 50) with a conductive ring (Figure 2, element 51) having an inward facing edge proximate a periphery of a radome (the edge of an element 51 facing toward element 41).

As to claim 10, Kildal discloses an apparatus, which inherently requires the steps of coupling a conductive ring (Figure 2, element 51) having an inward facing edge (Figure 2, the edge facing rdome) to a periphery of a radome (Figure 2, element 50) of the reflector antenna (as shown in figure 2).

As to claims 6 and 12, Kildal discloses the apparatus wherein the conductive ring is a plurality of electrically isolated segments (Figure 14, elements 41, 42 and 51, where the element 42 is a metalized segment of the ring and the element 41 is a dielectric which isolate segment 51 from segment 42).

As to claim 13, Kildal discloses the reflector antenna which inherently involves the method wherein the conductive ring (Figure 2, element 51) is coupled to the conductive ring (Figure 2, element 51) whereby it extends around the periphery from an inside surface (the side of the element 50 facing in the open end of the reflector dish (10)) to an outside surface (the side of the element 50 facing away from the open end of the reflector dish (10)).

As to claims 9 and 14, Kildal discloses the apparatus wherein the conductive ring on the outside surface has a smaller inner diameter than the conductive ring on the inside surface (Figure 14, elements 50 and 51, since the inner surface diameter (i.e. facing toward the element 41) shapes along the slight curvature of the periphery of radome, and the inner diameter of the outside surface shapes along substantially straight line, it results in the inside diameter of the outer surface to be smaller than the diameter of the inner surface).

As to claim 15, Kildal discloses a reflector antenna comprising: a sub reflector positioned to redirect an RF signal from a feed to illuminate a reflector (column 1, lines 44-49, the main purpose of the sub reflector is to reflect an RF signal onto the reflector (10), because otherwise the reflector antenna could not operate), a radome (figure 2, element 50) adapted to cover an open distal end of the reflector (as shown in figure 2, elements 50 and 10); and a conductive ring (Figure 2, element 51) coupled to the radome having an inward facing edge proximate a periphery of the radome (as shown in figure 2, where the edge surrounding the periphery of the radome (50) is an inward edge).

As to claims 2 and 16, Kildal discloses the apparatus wherein the conductive ring (Figure 2, element 51) extends from an inside surface (Figure 2, the part of the element 50, which is located between two arms of the metal ring, facing toward the element 41) to an outside surface (Figure 2, the part of the element 50, which is located between two arms of the metal ring, facing away from the element 41), around a periphery of the radome (as shown in the figure 2, elements 50 and 51).

As to claims 3 and 17, Kildal discloses the apparatus wherein the conductive ring has an inner diameter proximate an inner diameter of a reflector dish open end (column 6, lines 56-58, since metal ring (51) goes around the open end of the reflector dish (10) it is inherent that the diameter of the metal ring will be proximate to the diameter of the open end of the reflector dish).

As to claims 4, 11 and 18, Kildal discloses the apparatus wherein the conductive ring is one of metalised, electrodaged or over molded upon the radome (column 6, lines 59-63).

As to claims 5 and 19, Kildal discloses the apparatus wherein the conductive ring is one of metal, metallic foil, adhesive foil or a conductive rubber coupled to the radome (column 6, lines 56-58, i.e. conductive ring is made of metal).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kildal (US 6137449) in the view of Syed et al (US 20050035923). Kildal teaches all the limitations presented in claim 1, he does not teach however, an absorber coupled to the inside of the radome periphery. Syed et al teach RF absorbing material being located at the vertex area (Figure 3, element 18, paragraph 28). It would have been obvious to

one of the ordinary skill in the art during the time when the invention was made to incorporate RF absorbing material into reflector antenna as taught by Kildal, and place it at the periphery because RF absorbing material reduces loss of the reflector antenna (Abstract, lines 7-8).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kildal (US 6137449) in the view of R&F Products (http://www.randf.com/rf_foam.html). Kildal teaches all the limitations presented in claim 1, he does not teach however, the apparatus wherein the absorber is one of a foam ring or an absorbing surface coating. R&F Products teach foam which covers microwave frequency range and therefore is used as an absorber which can be optimized for reflection loss or insertion loss. It would have been obvious to one of the ordinary skill in the art during the time when the invention was made to incorporate R&F Products teaching into Kildal's antenna and make an absorber layer in the form of foam ring, because foam has many advantages such as lightweight, broadband performance, lowest cost, can be die cut to specific shapes, can be waterproof (Features, http://www.randf.com/rf_foam.html), and furthermore it would have been obvious to make the foam in the ring shape because this is the shape of the metal ring, so in order to make design without uneven edges, the ring would be the best option.

The Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

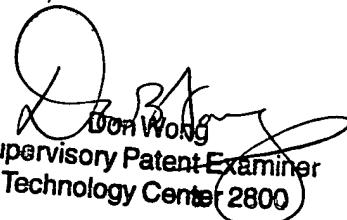
- US 4581615 discloses a double reflector antenna with integral radome reflector support
- US 20030038753 discloses a high gain, low side lobe dual reflector microwave antenna
- US 4755819 discloses a reflector antenna and method of fabrication
- US 6020859 discloses a reflector antenna with a self-supported feed
- US 5317328 discloses a horn reflector antenna with absorber lined conical feed.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela M. Lie whose telephone number is 571-272-8445. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Don Wong
Supervisory Patent Examiner
Technology Center 2800